Novel Microwave-Polyol Process for Nanophase Metals

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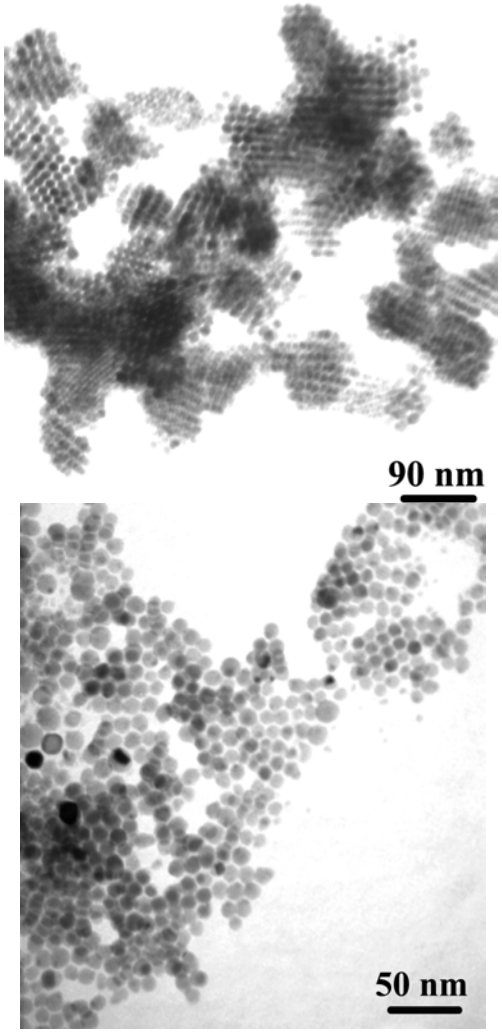
Nanophase metals such as silver are useful for optics, electronics, medical and catalysis applications. Our research involves rapid synthesis of nanophase metals of uniform size by a microwave-assisted method. Rapid and large scale production are the keys to applications of these nanophase metals. Here we have synthesized uniform silver nanoparticles on the order of 10nm using AgNO3 + dodecylthiol + toluene + ethylene glycol, under microwave conditions at 160 degrees C for 3 hours.The nanphases are hexagonally close packed and shown at two different magnifications.



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Education:

One graduate student (Dongsheng Li), and two postdocs (Qingyi Lu and Feng Gao) contributed to this work.

Outreach:

The Co-PI (S. Komarneni) is organizing a symposium at the Materials Research Society Fall meeting on Continuous Nanophase and Nanostructured Materials during November 30-December 5, 2003 in Boston, MASS.